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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

NGUYEN, HUNG

ART UNIT

PAPER NUMBER

2851

DATE MAILED: 06/04/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/865,734

Applicant(s)

OMURA, YASUHIRO

Examiner

Hung Henry V Nguyen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on Amendment filed 4/4/03.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-29 is/are pending in the application.
- 4a) Of the above claim(s) 4-6, 15, 16 and 22-29 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 3, 17, 20 and 21 is/are allowed.
- 6) ☒ Claim(s) 1, 2, 7-9, 11-14, 18 and 19 is/are rejected.
- 7) ☒ Claim(s) 10 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 29 May 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-2, 7-9, 11-14, 18-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schuster et al (U.S.Pat. 6,349,005) in view of Kitagawa (U.S.Pat. 5,748,372).

With regard to claims 1-2, 7-9, 11-14, 18-19, Schuster et al (fig.7) discloses a projection optical' system for forming a predetermined pattern formed on a first plane (7) onto a second plane (9) comprising substantially all basic features of the instant claims such as a first diffractive optical element (9) positioned in the optical path between the first plane and second plane; a second diffractive optical element (8) positioned in the optical path on the side of the second plane from the first diffractive optical element and an optical system (2) arranged between the first optical element and the second optical element. Schuster does not expressly disclose that the optical system (2) has a negative power. Using a proper combination of a first diffractive optical element, an optical system and a second diffractive element so that aberrations produced by the diffractive optical systems can be corrected is within level of one having ordinary skill in the art (see col.6, lines 50-60). For example, Kitagawa teaches an objective system (see figs. 5-7) using first and second diffraction type optical elements (DOE₁ and DOE₂) where an optical system placed between the first and second optical system comprising at least one lens having negative

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power (see col.9, lines 44-58). Kitagawa further teaches a front optical system positioned between the first plane and the first diffractive optical element; a rear optical system arranged between the second diffractive optical element and the second plane (see figs 5-7) where the first and second diffractive optical elements have a diffraction surface of sawtooth shape in section wherein each sawtooth is/or is not stepped (see fig.3). It would have been obvious to one having ordinary skill in the art at the time the invention was made to combine the teachings of Schuster and Kitagawa to obtain the invention as specified in claims 1-2, 7-9, 11-14, 18-19. It would have been obvious to one having ordinary skill in the art to employ an optical element with a negative power placed between the first and second diffractive optical elements as suggested by Kitagawa into the projection optical system of Schuster for at least the purpose of correcting the aberrations and thus improving the quality of the images to be printed.

Allowable Subject Matter

3. Claim 10 would be allowable if rewritten to include all of the limitations of the base claim and any intervening claims.
4. Claims 3, 17, 20-21 are allowed. The reasons for allowance have been set forth in the previous office action.

Response to Arguments/Arguments

5. Applicant's amendment filed April 4, 2003 have been entered. Applicant's amendment is sufficient in overcoming the objection to the abstract and the rejection of claims 7, 11-13 under 35 U.S.C. 112, second paragraph. Turning now to the prior art rejection, the applicant is

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reminded that the claimed subject matter to examination will be given their broadest reasonable interpretation consistent with the specification, and limitations appearing in the specification are not be read into the claims. In *re* Yamamoto, 740 F. 2d 1569, 1571, 222 USPO 934, 936 (Fed.Cir. 1984). With this in mind, the discussion herein will focus on how the terms and relationships thereof in the claims are met by the references. Response to any limitation that is not in the claims or any argument that is irrelevant to or does not relate to any specific claimed language will not be warranted.

With respect to the prior art, applicant's arguments have been carefully reviewed but they are not found to be persuasive. In response to applicant's arguments against the references individually, it has been held that one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). Further, Kitagawa meets the limitation of claim 1 as broadly claimed since Kitagawa teaches a projection optical system which forms an image of a first plane on a second plane where the projection optical system is provided with at least one negative lens having a negative power (col.9, lines 40-48) arranged between a first diffraction optical (DOE1) and a second diffraction optical (DOE2). It is the Examiner's position that in the broadest sense, a negative lens (having negative power) arranged in the optical path between first diffractive optical system and the second diffractive optical element as suggested by Kitagawa, can be regarded as an optical system having a negative power, arranged in the optical path between said first diffractive optical element and said second diffractive optical element as claimed. Also, the rejection here is made under 35 U.S.C. 103(a). The issue here is whether one of

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ordinary skill in the art, in the possession of the applied references would have modified the references to come up with applicant's invention. As noted in the prosecution history of this case, in view of the teachings of Kitagawa (which is a proper combination of a first diffractive optical element, an optical system and a second diffractive element so that aberrations produced by the diffractive optical systems can be corrected), it would have been obvious to a skilled artisan to employ an optical element with a negative power placed between the first and second diffractive optical elements for the purpose of correcting the aberrations and improving the imaging quality.

Finally, it is noted that applicant does not separately argue any further distinct patentability of dependent claims 2, 7-9, 11-14, 18-19. Thus, the Examiner believes that these claims are not additionally patentable over and above the patentability of independent claim 1.

6. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

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7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hung Henry V Nguyen whose telephone number is 703-305-6462. The examiner can normally be reached on Monday-Friday (First Friday off).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Russ Adams can be reached on 703-308-2847.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-4900.

hvn
June 2, 2003



HENRY HUNG NGUYEN
PRIMARY EXAMINER